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surface of the first semiconductor layer; and

forming a third semiconductor layer of a second conductivity type over the active region.

10. The method of Claim 9, further comprising forming the second semiconductor layer in a wurtzite crystal structure.

11. The method of Claim 9, further comprising grading the composition of the III-Nitride semiconductor alloy asymmetrically.

12. The method of Claim 9, further comprising grading the composition of the III-Nitride semiconductor alloy to reduce the effect of a piezoelectric field in the active region.

13. The method of Claim 9, further comprising grading a mole fraction of the III-Nitride semiconductor alloy linearly.

14. The method of Claim 9, wherein the III-Nitride semiconductor alloy is  $\text{In}_x\text{Al}_y\text{Ga}_{1-x-y}\text{N}$  with  $0 \leq x \leq 1$ ,  $0 \leq y \leq 1$ , and  $x + y \leq 1$ .

15. The method of Claim 14, further comprising grading the mole fraction of indium.

16. The method of Claim 14, further comprising grading the mole fraction of aluminum.

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17. (Amended) The method of Claim 9, wherein the active region is formed directly on the first semiconductor layer.

25. A method of forming a light emitting device, the method comprising:  
forming a first semiconductor layer of a first conductivity type having a first surface;  
forming an active region overlying the first semiconductor layer, the active region including a plurality of quantum well layers and at least one barrier layer, the barrier layer formed from a III-Nitride semiconductor alloy having an indium mole fraction graded in a direction substantially perpendicular to the first surface of the first semiconductor layer; and  
forming another semiconductor layer of a second conductivity type overlying the active region.

26. The method of Claim 25, further comprising forming the barrier layer in a wurtzite crystal structure.

27. The method of Claim 25, further comprising grading the indium mole fraction of the III-Nitride semiconductor alloy asymmetrically.

28. The method of Claim 25, further comprising grading the indium mole fraction of the III-Nitride semiconductor alloy to reduce an effect of a piezoelectric field in the active

region.

29. The method of Claim 25, further comprising grading the indium mole fraction of the III-Nitride semiconductor alloy linearly.

30. The method of Claim 25, wherein the III-Nitride semiconductor alloy is  $\text{In}_x\text{Al}_y\text{Ga}_{1-x-y}\text{N}$  with  $0 \leq x \leq 1$ ,  $0 \leq y \leq 1$ , and  $x + y \leq 1$ .

31. The method of Claim 25, wherein the active region includes a plurality of barrier layers each formed from a III-Nitride semiconductor alloy having an indium mole fraction graded in a direction substantially perpendicular to the first surface of the first semiconductor layer.